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THE INTEGRATION OF PHYSICALLY HANDICAPPED STUDENTS

A study guide to the eighth program in the ACCESS television inservice series
ONE GIANT STEP: The Integration of Children With Special Needs



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THE INTEGRATION OF PHYSICALLY HANDICAPPED STUDENTS

A study guide to the eighth program in the ACCESS television inservice series
ONE GIANT STEP: The Integration of Children With Special Needs



ONE GIANT STEP: The Integration of Children With Special Needs is a ten-program, inservice series of videotapes. Each videotape has a running time of 15:00 minutes and is supplemented by a study guide. The program order numbers and titles are:

- BPN 2154
- 01 Introduction
 - 02 The Integration of Dependent Handicapped Students
 - 03 The Integration of Trainable Mentally Handicapped Students
 - 04 The Integration of Educable Mentally Handicapped Students
 - 05 The Integration of Learning Disabled Students
 - 06 The Integration of Visually Impaired Students
 - 07 The Integration of Hearing Impaired Students
 - 08 The Integration of Physically Handicapped Students
 - 09 The Integration of Gifted Students
 - 10 The Integration of Behaviorally Disordered Students

(If you send a blank tape to the ACCESS NETWORK Media Resource Centre, there is no charge. If you prefer to buy tape from ACCESS, please send a purchase order to the Centre.)

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PROGRAM SUMMARY

This program documents the integration of three physically handicapped students, Stephanie, Cherie, and Garnet, into regular classroom settings. Teachers discuss some of the problems, techniques, and rewards of working with handicapped students. Garnet talks from a student's perspective about what integration has meant to him and about how he thinks he has benefited from it.

PROGRAM GOALS AND OBJECTIVES

This program is designed to help teachers, parents, school administrators, and others gain background information on physically handicapped (PH) students. It can be used as a base for effective integration of these students into the regular classroom environment.

As a result of inservice, participants will be able to:

1. define "physically handicapped" and to identify the PH student in terms of:
 - a. developmental characteristics
 - b. socio-emotional characteristics
 - c. learning characteristics.
2. identify the relevance of the Cascade Service Delivery Model in integrating PH students.
3. describe at least four teaching techniques that could be used in teaching PH students in an integrated setting.
4. list and describe, in general terms, resources, support services, and programs necessary to facilitate the education and integration of PH students.

BACKGROUND INFORMATION FOR THE TEACHER OR WORKSHOP LEADER

Physically handicapped students display a large range of impairment. Their developmental, socio-emotional, and learning characteristics vary

greatly. Some individuals require hospitalization, bed rest, prosthetic devices, and so on. Their academic achievement is highly dependent on their handicap, motivation, and the calibre of care they receive. They should be carefully assessed at a very early stage in order to devise the best possible learning environment for their particular needs. They should not be deprived of educationally relevant experiences. They must learn to capitalize on these experiences, and on educational materials, and respond to learning tasks as non-handicapped students do.

The type of education PH individuals receive is dependent on their intellectual, sensory, physical, and emotional characteristics. Besides regular schooling, they may need special assistance in such areas as daily living, mobility, and occupational skills. Many different types of professional people must be consulted to help PH students if they are to become as self-sufficient as possible. Medical specialists, psychologists, and social workers, as well as physical and occupational therapists, can assist the physically handicapped.

CHARACTERISTICS OF THE PHYSICALLY HANDICAPPED STUDENT

1. Developmental characteristics

a. Neurological impairments

One of the most common physical handicaps is damage or deterioration to the central nervous system, the brain, or the spinal cord. Some specific types of neurological impairment are as follows.

i. **Cerebral palsy** is one of the most common physical disabilities. It is characterized by paralysis, weakness, lack of co-ordination, and/or motor dysfunction. There are several kinds of cerebral palsy, and classification is often according to the limbs involved or the type of motor disability.

The most common class of cerebral palsy is *hemiplegia*, meaning the right- or left-hand side of the body is affected. *Quadriplegia* affects all four limbs, *paraplegia*, only the legs. With *diplegia*, the legs are involved to a greater extent than the arms.

A common motor disability is *spasticity*, which refers to the disharmony of muscle movements. Spastic contractions result in tense, difficult, and inaccurate voluntary motion.

Athetosis refers to almost constant, unco-ordinated involuntary jerking and writhing movements, particularly in the fingers and wrists. *Ataxia* is characterized by awkwardness of fine and gross motor movements, and lack of co-ordination.

The educational problems of students who have cerebral palsy vary because of the wide range in the severity of the handicap. A careful clinical appraisal is required for each individual to determine the type of special education that will best serve his/her needs.

ii. **Epilepsy**, that is, epileptic convulsions or seizures, is caused by an abnormal discharge of electrical energy to the brain. This produces a sudden alteration of consciousness and is usually accompanied by motor activity and/or sensory phenomena. There are three types of seizures, as follows.

Grand mal is characterized by a loss of consciousness and stiffening of the body. This "generalized fit" may be accompanied by a cry, and loss of bowel and/or bladder control. This stiff phase is usually followed by a stage in which the legs and/or arms jerk synchronously. Other characteristics can be constricting, then dilating, pupils, froth around the lips, and, in the final stage, regular breathing will cease briefly.

The grand mal seizure lasts anywhere from less than one minute to less than two minutes. It may be followed by a general feeling of confusion, a headache, or a period of deep sleep that can last minutes or hours.

Petit mal, in its typical form, is a momentary suspension of all activity, or a staring spell. The episode lasts less than 5-10 seconds, and is commonly overlooked as daydreaming.

Petit mal variants take one of two forms. The myoclonic attack results in brief contractions of a muscle or groups of muscles, causing the head to drop

forward or backward, or the arms to jerk upward, or the trunk to bend sharply. The akinetic attack is characterized by a sudden loss of muscle tone that may cause falling, nodding, or a sudden jolt.

Psychomotor effects. Temporal-lobe fits are characterized by their semi-purposeful, automatic nature. The state of consciousness appears to be altered, but the individual can still carry out such complex, co-ordinated tasks as walking, undressing, or repeating the same phrase over and over again. (No attempt should be made to restrain as this can cause vigorous resistance.) The individual may later recount vivid visual, auditory, or gustatory hallucinations.

It is important to remember that students with epilepsy are able to function normally, except when having a seizure. Intelligence is not affected by epilepsy, so classroom procedure should include a knowledge of the disorder and how to manage seizures. Also needed is a commitment to help dispel the myths, ignorance, and fear connected with seizures.

Teachers and adults should be aware of appropriate ways to respond to someone who is undergoing a seizure.

- The seizure itself is painless. Remain calm, and students will assume the same emotional reaction as their teacher.
- Do not try to restrain the PH student. Nothing can be done to stop a seizure once it has begun. It must run its course.
- Clear the area around the student so that he or she does not come up against hard objects and inflict self-injury. Try not to interfere with the student's movements in any way.
- Do not force anything between the teeth. If the mouth is already open, a soft object like a handkerchief can be placed between the side teeth.
- Generally, it is not necessary to call a doctor unless the attack is immediately followed by another major seizure, or if the seizure lasts more than 10 minutes.
- When the seizure is over, let the student rest if need be.

- The student's parents and physician should be informed of the seizure.
- Turn the incident into a learning experience for the entire class. Explain what a seizure is, that it is not contagious, and that it is nothing to be afraid of. Teach the class understanding toward the student—but not pity—so that classmates will continue to accept this individual as one of their own.

iii. Spina bifida. This is a congenital defect caused by the spinal cord's failure to close at midline. A student thus handicapped is able to get around with braces, crutches, or in a wheelchair. Lack of bowel and bladder control is one of the problems that teachers must be aware of. They may have to assist in changing clothing or, in some cases, diapers; and help the student practise good personal hygiene to prevent odor and infection, as well as to facilitate social acceptance and adjustment. Individuals who suffer from spina bifida can attend regular classes with proper orthopedic care and corrective surgery.

iv. Polio, that is, poliomyelitis or infantile paralysis, was once a much-feared infectious disease before Jonas Salk found the vaccine in the 1950s. The virus attacks the nerve tissue in the spinal cord, brain, or both. The result is a crippled individual with severe muscular weakness, spasticity, complete paralysis, or skeletal deformities. The disease does not affect the intelligence of the individual; consequently he or she is able to attend regular public school if proper medical and orthopedic care is given.

v. Multiple sclerosis, or MS, is a disease of adolescents and adults for which there is no known cure. It can become unpredictably better or progressively worse. The cause is unknown. Individuals with MS suffer a chronic, slowly progressive disease of the central nervous system in which there is hardening of the protective myelin sheath of certain nerves. This causes visual impairment, tremors, muscle weakness, spasticity, speech difficulties, dizziness, mild emotional disturbances, as well as difficulty in walking. Individuals with MS can usually lead

semi-normal lives. School attendance is stressed; or home instruction if the former is not possible.

b. Musculo-skeletal impairments

Some students are not neurologically impaired, but their mobility is affected because of defects or diseases of the muscles or bones. Muscular and skeletal problems involve an individual's limbs, spine, or joints, creating a difficult situation in terms of walking, standing, sitting, or using the hands.

Musculo-skeletal impairments may be present at birth or acquired after birth.

i. Muscular dystrophy. The most fatal form to children is Duchenne or pseudohypertrophic muscular dystrophy, most commonly found in males. The disease hampers the student in walking and climbing stairs. It progresses throughout childhood and may confine an adolescent to a wheelchair. Another type, *pseudohypertrophy*, or false growth, seldom allows an individual to live beyond adulthood. The muscles in the pelvic girdle, shoulder girdle, legs and arms give the student the appearance of healthy muscular strength, but, in actuality, fatty tissues are replacing muscles. A third type, usually common in adolescents, is *facio scapulo-humeral muscular dystrophy*, which affects the shoulder and facial muscles. Some individuals may become totally disabled, while others may not be aware of the symptoms and live normal lives.

The main problems of an MD individual are associated with physical immobility, and early total disability. He or she should maintain a normal pattern of activity to minimize deterioration or degeneration. Intellectual capacity is not affected by the disease, and, with proper motivation and educational help, the individual will benefit from schooling.

ii. Arthritis, although found more commonly in older people, afflicts children in the form of rheumatoid arthritis and involves pain in and around the joints and muscles. It varies in severity from mild inflammation, swelling, and stiffness of the joints and connective tissues to debilitating neurological

damage or weakened muscles and joint deformity. Complications such as eye infections, respiratory and heart problems, and fever can also plague the sufferer. Normally, this disease is more commonly found in females than in males.

Other congenital conditions, acquired either at birth or shortly thereafter, affect the musculo-skeletal system.

- **Clubfoot** occurs when one or both feet are turned at the wrong angle at the ankle.
- **Scoliosis** is a curvature of the spine acquired from poor posture, disease or muscular weakness, from muscular dystrophy, or from cerebral palsy. This condition is most common in females.
- **Legg-Calve Perthes disease** occurs in boys and girls 3-11 years of age and is characterized by a flattening of the head of the femur (hip) bone, including destruction of the bone tissue, pain, muscular spasm, or limping.
- **Ostogenesis imperfecta**, the brittle-bone disease, causes improperly formed bones that break very easily.

In most of these conditions, the student's intelligence is unaffected. He or she may need help in mobility and may be occasionally confined to home or hospital but, generally, educational experiences can be made normal.

c. Other Physical Impairments

Due to such unforeseen circumstances as accidents, some students may have acquired a physical handicap that has disabled or maimed them for life: falling, burning, poisoning, and vehicle mishaps. The victim's impairment could range from disfigurement and amputation to other physical, psychological, or educational disabilities.

- i. **Asthma** is a chronic condition characterized by repeated difficulty in breathing. The condition in younger individuals is usually food-related or caused by such inhalant allergens as airborne particles of dust, mold, and mildew. Emotional problems as well as allergens trigger asthma attacks. Asthma

becomes a serious educational problem when the student must be hospitalized or kept at home in an allergen-free environment. Asthma attacks can even cause death or permanent neurological damage due to oxygen deprivation. Thus, strenuous activity must be eliminated from the program of most asthmatic students.

- ii. **Cystic fibrosis** is a hereditary disease of chronic respiratory or digestive problems and is most commonly found in Caucasian populations. The symptoms are chronic cough and difficulty in breathing, frequent respiratory infections, and excessive bowel movements. The secretions from the exocrine glands are thick and sticky, causing the respiratory and digestive systems to become clogged with mucus.

Cystic fibrosis is a serious condition, but students afflicted by it have a good chance of living and of leading fairly normal, active lives. Teachers, however, should caution against strenuous exercise and should encourage coughing to loosen the thick mucus coating of the bronchial passages.

- iii. **Sickle-cell anemia** is inherited from both parents' sickle gene. This chronic blood disease is most commonly found in Black populations. Hemoglobin in the red blood cells is distorted into crescent (sickle) shapes that cannot readily pass through blood vessels. The decrease in blood supply to tissues causes severe abdominal, leg, and arm pains, as well as high fever, swelling of the joints, and fatigue, loss of appetite, paleness, skin ulcers, and swelling of the joints and jaundice.

Students with sickle-cell anemia tend to develop spindly legs, short trunks, and tower-shaped skulls. In advanced stages, kidney failure may result. Individuals with this disease can die from cerebral hemorrhage, shock, or other complications, often by 20 years of age. Treatments for sickle-cell anemia include rest, oxygen, pain medication, fluid, and blood transfusions. Teachers should be aware of the need for prolonged hospitalization and quiet activities between crises. Frequent absences from school often affect academic performance.

iv. Diabetes is a metabolic disorder, created by the body's failure to burn up the sugars and starches needed to create energy. Insulin is not being produced by the pancreas, resulting in a lack of vitality, inattentiveness, dizziness, abdominal pain, or insulin shock.

Diabetics require insulin treatment, but are otherwise able to function as normal individuals. The diabetic student's diet, toileting needs, and activity level should be monitored by the teacher. Further, the teacher should be aware of the following facts about insulin.

Too much insulin (or an insulin reaction) causes headache, nausea, vomiting, irritability, shallow breathing, and/or cold, moist skin.

Treatment: Give orange juice, a candy bar, or a sugar cube.

Too little insulin causes fatigue, intakes of excessive amounts of water, production of large amounts of urine, excessive hunger, deep breathing, and/or warm, dry skin.

Treatment: Give insulin.

v. Battered students. Some children suffer battering or other abuse—they are beaten, burned, sexually molested, starved, or neglected and brutalized by their parents or other adults. The consequences of child abuse may be permanent neurological damage, internal injuries, skeletal deformities, facial disfigurement, sensory impairment, psychological problems—even death.

The special educational provisions that are required for battered students run the gamut from special attention by regular classroom teachers to residential or hospital teaching. It is important to realize that some students are deliberately and maliciously physically handicapped by adults. Severe psychological trauma accompanies physical abuse and neglect, which is certain to affect school performance. Some indicators of abuse are a child's being.

- bruised
- injured
- excessively aggressive, disruptive or destructive
- excessively shy, withdrawn, passive or compliant

- inadequately or poorly dressed
- undernourished
- unkempt
- unexplainably absent from school
- frequently late
- unwilling to go home when school is over.

2. Socio-emotional characteristics

The socio-emotional characteristics of the PH child will be largely determined by the following factors:

a. Public attitudes

The reaction from the general public can influence a student's feelings about self, psychologically and educationally, and also affect his/her view of employability. Fear, rejection, or discrimination may cause a PH person to waste time and energy trying to hide personal differences from the norm.

This student may also try to be *more* dependent, if people show pity and allow no autonomy or independence.

b. Family attitudes

Many families with a seriously handicapped child will feel fate has been unfair and that they have been burdened. Parents often feel both guilt and shame, blame one another for their misfortune, and neglect the non-handicapped members of the family. The handicapped student's siblings may show resentment because of the attention and time he or she receives. However, with help and understanding from related professionals and parent-support groups, the family can become the major source of the student's strength and help formulate a positive view of self.

c. Attitude toward self

The attitudes of the PH concerning their physical condition are usually a result of how their peers respond to them, as well as the way they are treated by such "important" others as teachers and parents. They have learned responses toward themselves, such as shame and guilt. PH students must be encouraged to be as independent and as self-sufficient as possible within the limits of their physical disability.

Some reactions are inevitable for the PH individual, no matter how treated. He or she may fervently wish to be normal and able to participate in the same activities as non-handicapped peers. Fear and anxiety will be felt when separated from parents for hospitalization or for painful medical procedures. Parents and doctors should work as a team to make every effort to reduce the emotional stress that a PH individual faces so much more frequently than non-handicapped peers.

Teachers, as well as peers, have to try to understand a student who is physically handicapped in a three-dimensional sense. How does he or she feel about self? About his/her world? About the handicap? About how other students feel? Has he or she questions that are unanswered? Fears that are ungrounded? There are a number of excellent resources available for exploring and working on attitudes toward the handicapped. Consult the References for Workshop Leaders and Teachers at the back of this book. It provides information on changes in attitudes or behavior, be it the teacher, classmates, or others.

3. Learning characteristics

PH students differ in the nature and severity of their affliction. Some will often be absent from school because of hospitalization, medical check-ups, bed rest at home, and therapy sessions. Some will require special teaching methods because they may be mentally handicapped in some way. Some will have normal intelligence, but still fall behind their classmates in academic achievement because of frequent interruptions in their schooling. Some PH students are highly motivated achievers and have high intellectual capacity. Some who are neurologically impaired will be slower than their peers in academic achievement.

The teacher must work with the PH student, and with the various professional service people available, in order to determine the most desirable means of achieving educational goals for this student.

THE CASCADE SERVICE DELIVERY MODEL

The vast majority of PH students do not require a hospital setting for most, even part, of their schooling. If they are placed in appropriate educational settings geared to their individual needs, they can—and will—be successful at many pursuits.

The Cascade Model of Integration is not commonly applied. Only those PH students who require intensive therapy in a protective environment are placed in school/hospital settings. Even then, the emphasis is on moving these students to a more normal school placement just as soon as is possible and feasible.

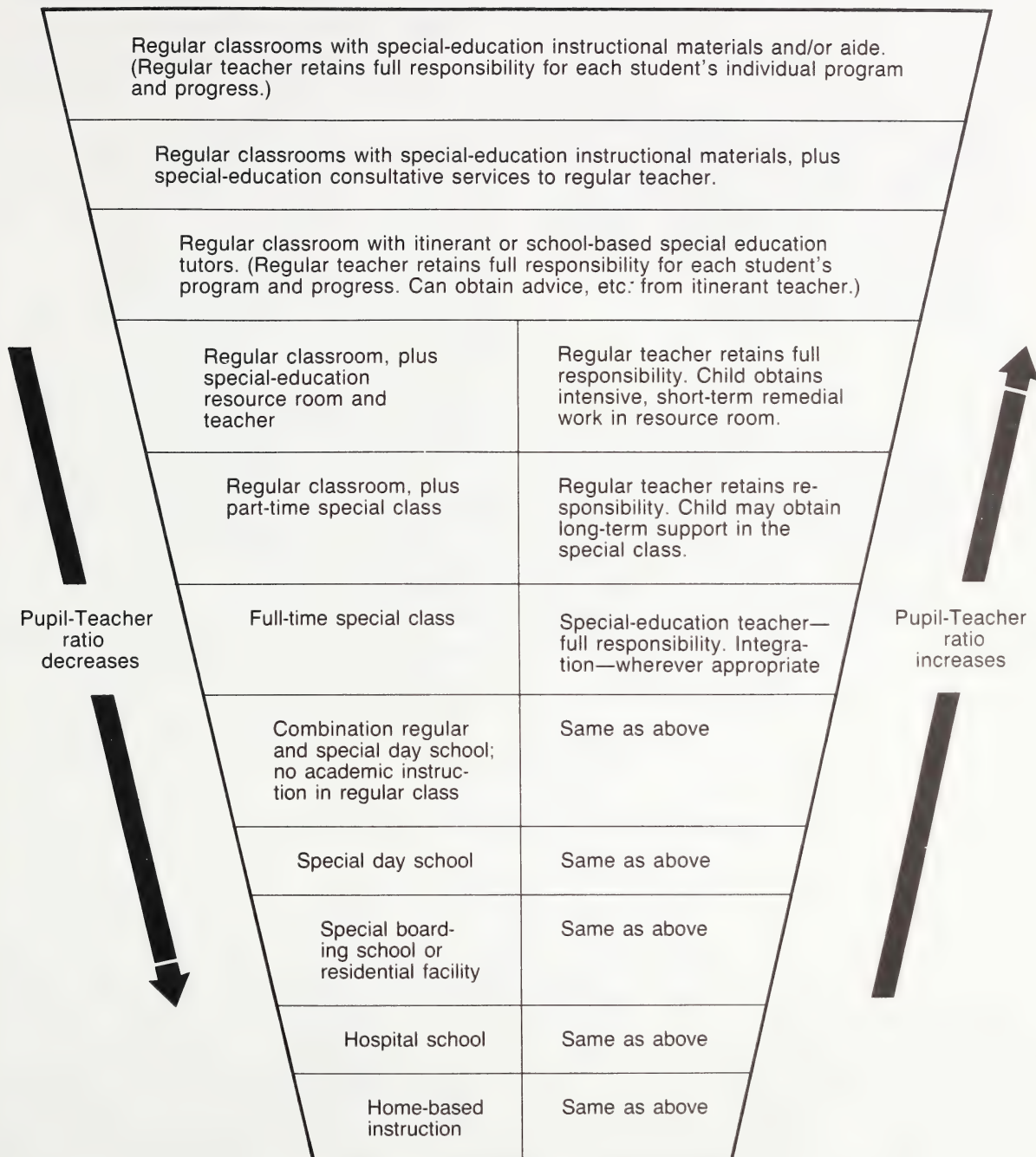
TEACHING TECHNIQUES

The following are priorities in the teaching of PH students.

- 1. Develop motor abilities.** In many cases, this will mean using special materials, special aids, and supports for mobility. The teacher should consult with various experts and professionals (e.g., physiotherapists, occupational therapists, recreational therapists, and special-education teachers) to find out about methods and materials most suited to this student.
- 2. Develop language and speech.** With the aid of a speech therapist, parents, and a special-education teacher, the classroom teacher can encourage the development of the abilities to perceive and express oral language, perceive and interpret visual stimuli, and to give expression through speech and gesture.
- 3. Develop the child.** The teacher must work on visual and auditory perception, discrimination, memory, and other factors considered intellectual. This can best be done with a program that includes language usage, listening, planning, problem solving, dramatization, imagination, and creative expression (through art and music media), creative rhythms, visual and auditory memory and discrimination, and perception.

By providing fun ways to learn (toys, sand boxes, learning corners, etc.), the teacher is motivating the student to respond to the

CASCADE SERVICE DELIVERY MODEL *



* Adapted from the Reynolds framework (1962)¹, the Dunn model (1963)², and the Deno cascade model of special education services³

¹Reynolds, Maynard C. "A Framework for Considering Some Issues in Special Education" in *Exceptional Children*, Vol. 28, No. 7, March 1962, p. 368.

²Dunn, Lloyd M., ed. *Exceptional Children in the Schools: Special Education in Transition*. New York: Holt, Rinehart, Winston, 1963, p. 37.

³Deno, Evelyn. "Special Education as Developmental Capital" in *Exceptional Children*, Vol. 37, No. 3, November, 1970, p. 235.

environment physically and mentally. Again, consult the experts in this field. Special-education teachers and resource people will be particularly helpful here.

4. Develop social and emotional adequacy in the student during school hours by providing him/her with opportunities to acquire emotional security, a sense of belonging, and independence. The school environment should give the student opportunities to do things on his/her own, to learn to interact with others, to share and to co-operate. It can offer examples of activities that can be imitated, plus the security of knowing that help is available when needed.

CONTENT OF PROGRAMS FOR THE PHYSICALLY HANDICAPPED

The limitations of PH students vary greatly. Goals and curricula can be determined only after assessing each student's needs by studying intellectual, physical, sensory, and emotional characteristics. This student may have been deprived of regular school experiences that peers encounter; it may be difficult for this student to manipulate materials and respond to tasks in the classroom that others consider routine.

The curricula and goals of the educational program should be the same for the PH student as for peers. He or she should increase the ability to read, write, do arithmetic, and should also be exposed to the same experiences as classmates. The particular goals of a developmental nature that teachers can include in a program for PH students include:

1. physical independence
2. emotional support
3. academic growth
4. career considerations.

SERVICES FOR THE PHYSICALLY HANDICAPPED

INSTITUTION OR AGENCY

Dr. Gordon Townsend School
(Alberta Children's Hospital)
1820 Richmond Road S.W.
Calgary, Alberta T2T 5C7
Telephone: 229-7211

Pre-school Multi-handicapped Program
(Alberta Children's Hospital)
1820 Richmond Road S.W.
Calgary, Alberta T2T 5C7
Telephone: 229-7211

Providence Child Development Centre
5232 - 4th Street S.W.
Calgary, Alberta T2V 0Z4
Telephone: 255-577

Vocational Rehabilitation and Research Institute
3304 - 33 Street N.W.
Calgary, Alberta T2L 2A6
Telephone: 284-1121

In Edmonton, the resources, support services,
and programs include:

Glenrose School—Hospital (Day School)
10230 - 111 Avenue
Edmonton, Alberta T5G 0B7
Telephone: 471-2262

In rural areas, or small centres such as
Lethbridge: a clinic under the supervision of the
Alberta Children's Hospital Community Outreach
Program provides service to physically
handicapped children through physiotherapy,
occupational therapy, and speech therapy.
Children in the Lethbridge community are seen
on a regular basis by such a professional team.
Public health nurses also act as liaison between
the schools and the clinic.

Medicine Hat and Drumheller are both in the
process of establishing similar clinics in each
city.

SERVICES PROVIDED

The School is designed for physically
handicapped children, both ambulant and non-
ambulant. It combines the benefits of traditional
classroom arrangement and open areas. All
rooms in the School are accessible by
wheelchair. Many children are taught at bedside
within the Alberta Children's Hospital.

Provides physiotherapy, speech therapy,
occupational therapy, education, and social
services to those physically handicapped
students in regular classrooms in the community.
Provides liaison between school and hospital
programs.

Provides vocational training for severely
handicapped young adults

PREVIEWING QUESTIONS

These questions are designed to allow participants to explore their feelings toward the physically handicapped. For maximum benefit, it is suggested that participants discuss one or more of the questions in a small group setting, then report back to the larger group.

1. What activities would you miss most if confined to a wheelchair?
2. Your son would like to bring his friend Johnny home for dinner. Johnny is confined to a wheelchair. What would your reaction be?
3. List a variety of jobs where being physically handicapped would not present a problem.
4. Which of the following would you rather be? Why?
 - a. physically handicapped, or deaf
 - b. physically handicapped, or blind
 - c. physically handicapped, or mentally handicapped.
5. You are in a position to hire a co-ordinator for your firm's public-relations office. A physically handicapped and a non-handicapped person are the top applicants. Their experience and education are the same. Which would you likely hire? Why?

PREVIEWING ACTIVITIES

The following activities are taken from the *P.A.T.H. (Positive Attitudes Toward the Handicapped)* kit and are used courtesy of the Regional Resource Service of Alberta Education, Calgary.

1. Clumsiness

Many people other than the handicapped have problems with their fine motor co-ordination: threading a needle, buttoning a shirt, clasping a necklace, etc. When people are tired they often have these problems. Children can also have these problems, partly because it takes practice to do these things and partly because their bodies are still growing and changing. (Remember when you had to be dressed because you couldn't do up your buttons or tie your laces?) Emphasize to participants that if they have problems doing some of these things, it does not necessarily mean that they have a physical handicap. Some physical handicaps can give a person problems in controlling the

muscles in their hands. Though they may have problems doing fine work, given time, they usually accomplish it.

Materials: design papers (pages 11 and 12); thick socks; shoes with laces; puzzles; design papers; crayons; scissors; paper; beads and string.

Activity: Ask participants to put a pair of thick socks on their hands. Then ask them to try tying their shoes, buttoning a shirt or coat, or working a puzzle. They could also try using scissors, changing beads, coloring one of the design papers, or turning the pages of a book.

Invite participants to discuss the following:

How did you feel when you were doing this activity?

What kinds of problems did you have?

How could you overcome them?

2. One-Hand Shoe Tie

Some people have the use of only one hand. This could be because the other hand is paralyzed, because muscles don't work, or because the other hand has had to be amputated. People who lose a hand because of amputation often get an artificial hand or hook. This is known as a prosthesis. With some artificial limbs, a person can learn to do most of the things he or she used to do. With other artificial limbs, or if the arm and hand are paralyzed, the person learns to rely upon the good hand. With practice, many things that we normally use two hands to do can be done with one hand.

Materials: shoes with laces; a belt.

Activity: Have participants untie and then tie a shoe, using only one hand. Have them put on a belt.

Invite participants to discuss the following:

Did you need to think harder than normal about what you were doing?

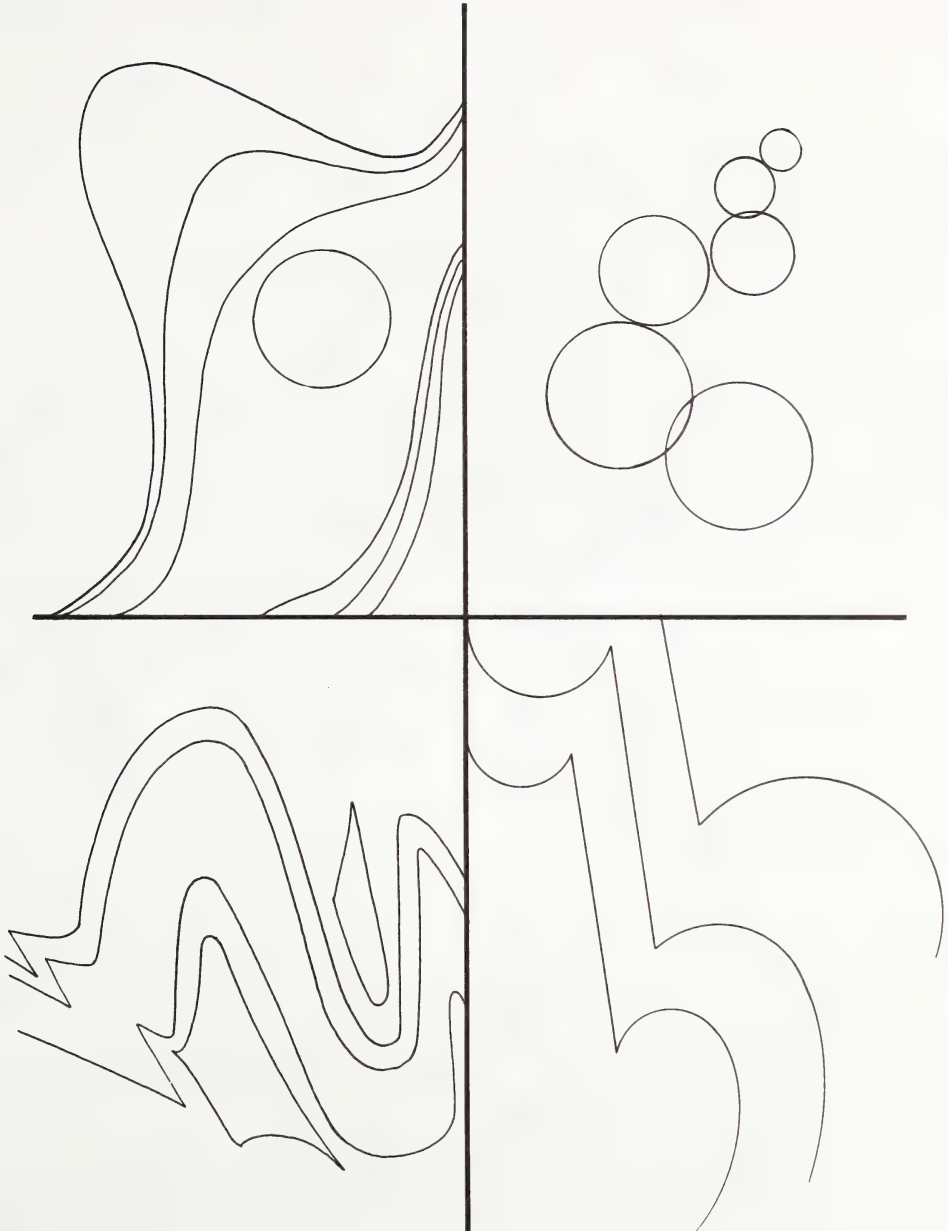
What are some other activities that might be difficult?

What could you do to overcome these problems?

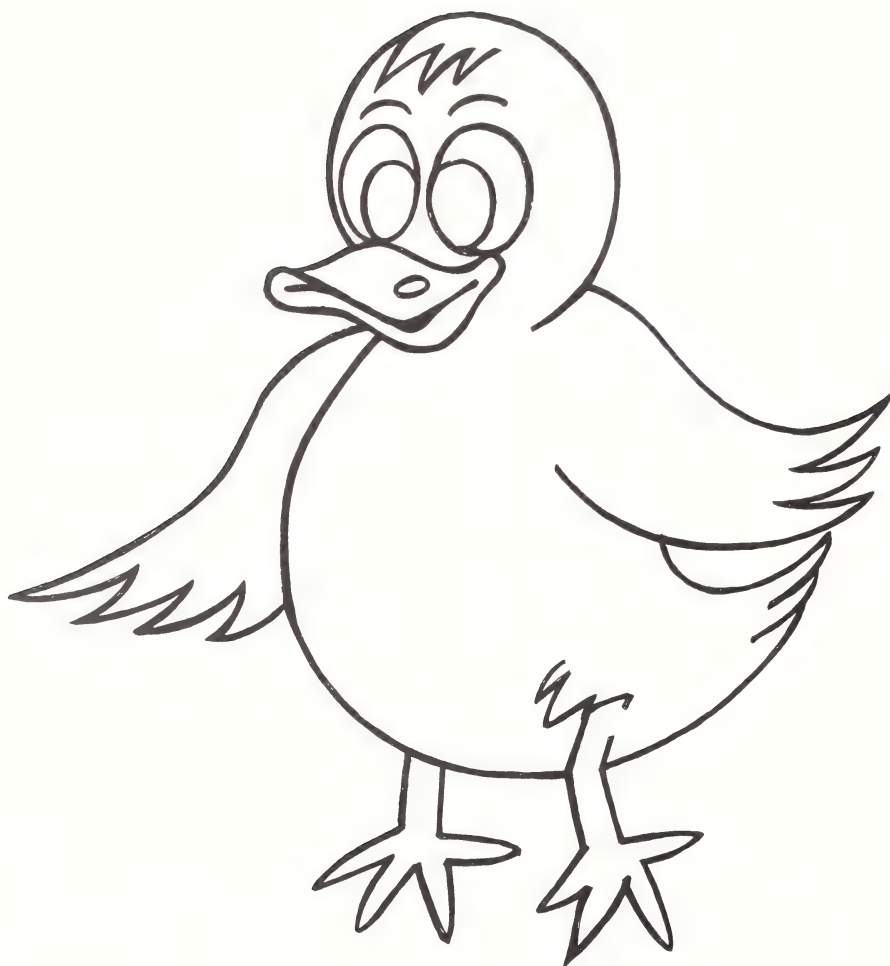
3. Mouth Writing

Some PH individuals do not have the use of either their hands or arms, due to paralysis or to lack of muscle control. Even though they may not be able to use their limbs, they can still accomplish a great many things. Many can write effectively and/or paint beautifully. They manage to do this by holding the pen or paint brush in

DESIGN PAPER I



DESIGN PAPER 2



their mouth. Just as it takes practice to learn to write using a hand to hold the pen, so it takes practice to learn to write using a mouth to hold the pen. (Christmas cards are painted by PH people using their mouth to hold the brush.)

Materials: Mouth Writing Activity Sheet (p. 14); paper and pens; (optional) brushes and paints.

Activity: Hand out paper to the participants. Asking them to use their own pen or pencil (for sanitary reasons), have them write or print their name on paper. They must use only the mouth to control the pen or pencil. Then have them do the Mouth Writing Activity Sheet.

Some PH people use toes to hold the pen. Some participants may want to try writing with the pen held this way.

Invite participants to discuss the following:

Could you read what you wrote?

Was it difficult for you to write like this?

How would you feel if this were the only way you could write?

What are some things you could do to make it easier to write like this?

4. All Thumbs

Sometimes individuals with physical handicaps have a hard time because they don't have good muscle control. Most of us experience this problem when we try to write with our non-dominant hand. We know how to write and how to form the letters, but somehow we just can't seem to get the non-dominant hand to work properly. This sort of thing is what happens to people with some types of physical handicaps. They tell their hands to do certain things, but their hands can't always follow instructions.

Materials: masking tape; small objects such as paper clips, marbles, straight pins; a container for these objects.

Activity: With masking tape, join the fingers of each participant's non-dominant hand, leaving only the thumb free. Have each person spread various small objects on the table, using only the taped hand. Then ask them to pick up the objects and put them back in the container. Remember, they are to use only the taped hand.

Invite participants to discuss the following:

Did your hand do what you wanted it to do?

How did it feel not to have control over your hand?

How could you overcome this problem (e.g., slide objects off desk into container rather than picking them up)?

5. Balance Problem

Many men and women with cerebral palsy and other physical handicaps have difficulty keeping their balance. They do not have complete control over the muscles of their body. They have a problem walking in a straight line. Those with multiple sclerosis (MS) can also have this problem. Sometimes passersby give them dubious looks because they think these individuals are drunk; the fact is, they have a hard time when they walk. Some people think that if individuals can't walk properly, then maybe they can't think properly either. This just isn't true. If you sprain an ankle or have your foot go to sleep on you, you walk differently for a while. This doesn't affect the way you think, just as it doesn't affect the way that people with cerebral palsy or MS think.

Materials: balance beam, or masking tape on the floor.

Activity: If you use masking tape on the floor, make a line at least 3 metres long. Have participants close their eyes and spin themselves around a few times. (They should do it one at a time, unless there are beams or taped lines for everyone.) Immediately after spinning, they open their eyes and walk along the masking tape or the beam.

If you use a balance beam, be sure to have someone walking alongside the participants. They will be dizzy after spinning around and may slip off the beam.

Invite participants to discuss the following:

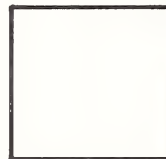
Was it easy or difficult to stay on the line/beam? Why?

How would you feel if you were always afflicted with imbalance when you walked?

What equipment could you use to help you walk better and feel safer?

MOUTH WRITING ACTIVITY SHEET

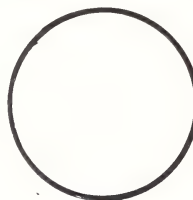
1. PUT AN X IN THE SQUARE.



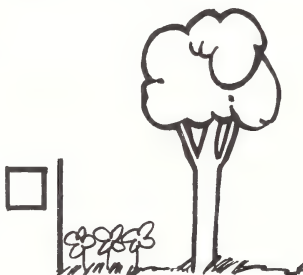
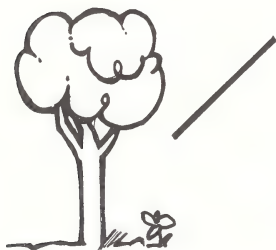
2. FILL IN THE MISSING LETTERS.

AB _ DEF _ HIJ _ LMNOPQ _ S _ UVWXY _

3. DRAW A FLOWER IN THE CIRCLE.



4. FINISH DRAWING THE HOUSE.



5. COLOUR THE BALLOON RED.

6. DRAW A STRING FROM THE BALLOON TO THE MAN'S HAND.



POST-VIEWING QUESTIONS

1. What does Cherie have in common with her classmates?
2. How does Garnet benefit from being with non-handicapped peers? Do you see any benefits for these peers?
3. What would the major obstacles be if you were to have a PH student join your class? Name some possible ways of overcoming them.
4. If you were physically handicapped, what would be a problem for you in your daily routine? How would you overcome it?
5. How many great, inspiring individuals can you name who have had physical handicaps?

POST-VIEWING ACTIVITIES

These activities are intended to give participants practical suggestions on how to experience success when working with the PH student. It is recommended that these activities be carried out in small groups, which later report back to the larger group.

1. Barriers

Some PH individuals have to use wheelchairs to move from place to place. Being in a wheelchair can be tiring and very frustrating. There are many locations that have barriers or are difficult to get into and out of if you are in a wheelchair. Visiting friends can be hard if there are many steps leading up to their house, or located within their home. Some schools, restaurants, movie theatres, churches, and stores are so constructed that a person in a wheelchair has a very tough time getting into the building. But buildings aren't the only places that present obstacles. How many times have you seen a person in a wheelchair in a bus or on a plane? People in wheelchairs like to go places, too, but it can be very difficult for them.

Materials: task cards; measuring tapes; chairs.

Activity: Hand out task cards to the participants. (You may want to have them work in pairs or small groups for this activity.) Have the participants follow the directions on the cards.

Invite participants to discuss the following:

Does this building have any barriers? If so, what are they?

Think about your home. If you had a friend who was in a wheelchair, would it be difficult or easy for your friend to visit you?

What about other buildings that you know? Do they have barriers?

How could buildings be changed to help people in wheelchairs?

2. Getting Ready

In groups of four, discuss your classroom and school layout. What changes would you have to make to be able to accept a student in a wheelchair, or one who uses crutches?

What changes could you and your students carry out? What changes would be structural? Rejoin the larger group and share your thoughts, ideas, and suggestions.

3. Lifting and transferring techniques

After the discussion, make a list as follows.

It is recommended that all staff working with PH students consult a physiotherapist or occupational therapist about methods of lifting and transferring. (When lifting and transferring a student from one place to another, people *must* take precautions against strain/injury to the back.) The group leader should exercise discretion before asking participants to try these lifts and transfers.

Materials: none.

Activity: It is important to remind participants that lifting is done with the legs, *not the back*. Proceed as follows:

- bend knees
- get a good secure grip on the weight to be lifted
- bring that weight close to the body
- keep the back as straight as possible*
- lift by straightening the knees.

Preparation prior to doing a lift and transfer

- i. Make sure there is room to manoeuvre with ease.
- ii. Plan where to transfer the student *before* beginning, e.g., to a beanbag chair, floor mat, or toilet.

TASK CARDS

Check out doorways with a tape measure. For a wheelchair to pass through easily, the doorway should be at least 33" (82.5 cm.) wide.

Could a person in a wheelchair use the public phone? Sitting in a chair, see if you can reach the phone to put the money in and dial.

Check out doorknobs with a measuring tape. Are the doorknobs of all main doors 3' (90 cm.) from the ground so that people in wheelchairs can reach them?

How many sets of stairs are there in the building? Are there ramps or elevators, as well, for people who use wheelchairs?

Can washroom sinks be reached by someone in a wheelchair? Take a chair and see if you can reach the sink while sitting in a chair.

Check out the washroom. Could a person in a wheelchair get in? (The doorway should be at least 33"—82.5 cm.) wide. Are there grab bars in the washroom stalls so that people can lift themselves from their wheelchair to and from the toilet?

Are the fire alarms low enough? If a person in a wheelchair wanted to warn everyone of a fire, could he or she reach the alarm? Using a chair, see if you can reach the alarm while sitting down. (Be careful not to set off the alarm!)

- iii. Make sure the pathway is clear and safe, e.g., no objects to trip over, floor not wet or slippery, no abrupt changes in floor level.
- iv. Size up the load. Consider the student's capabilities. Decide on the type of transfer required:
 - standing transfer
 - two-man lift
 - one-man lift.
- v. Put the adapted chain or wheelchair brakes on and check that the chair is secure.
- vi. Remove any chair parts that will hinder the lift, e.g., armrests, footrests, abduction pommel.
- vii. Unfasten the student's seat belt and any other safety straps, e.g., chest strap, foot straps.

Now you are ready to begin the transfer.

Standing transfer

Example: Transferring a student from wheelchair to toilet. The student is able to take some weight via the legs. The teacher must stand with a wide base, e.g., legs apart, to increase stability.

Standing positions for helper/helpers:

Walk Standing

- base increased in a front-to-back direction, e.g., feet apart with a good wide base; one foot forward, the other back
- this position will withstand a force applied either from in front or behind.

Stride Standing

- base increased sideways
- feet positioned as though standing at ease
- this position will withstand a force from either side.

METHOD:

Student—places hands on helper's shoulders

- leans forward to bring weight forward
- places feet well apart on floor.

Helper —stands in walk-standing position facing student

- positions hands under student in the axilla (underarm) area
- shifts weight to front foot while keeping close to student
- transfers weight to back foot as student is lifted into standing position.

Helper and student are now standing, with former giving necessary support.

Helper —shifts feet to stride standing (base increased sideways)

- pivots student and self until the back of the student's legs contact the toilet.

Helper is not in a walk-standing position due to the pivot movement.

Helper —maintains a straight back

- brings weight forward and slowly lowers student onto the toilet by bending front knee.

Two-man lift

Example: Transferring a student from wheelchair to floor mat. Student very disabled and heavy, but with reasonable use of arms. Two staff members required. One person must be in command, e.g., to announce, "1, 2, 3", or "Ready—now lift."

Standing position for staff:

- one person on each side of student, facing each other
- feet placed apart with a good wide base.

METHOD:

Student—places arms across the shoulders of staff members

- bends head forward with hips and knees flexed.

Staff —place one arm across student's back to opposite side at waist

- place other arm under both thighs
- get a firm grip
- bend knees
- keep back as straight as possible
- lift when command given
- lift by straightening legs

—carry student to mat

- on command, bend knees and slowly lower student to mat

- kneel on mat, release grip on legs, then on trunk, as student is slowly positioned in a lying posture.

Note: If size of student makes it impossible to grip waist and thighs, the two helpers must grasp each other's wrists firmly.

Safety Tip: If, at any point during the transfer, you start to lose your grip, inform your partner. If the student cannot be safely returned to the wheelchair or placed on the floor, then you both must immediately go down onto the floor on your knees and break the student's fall with your thighs. Serious injury is thus prevented.

One-man lift

Example: Transferring a student from floor mat to wheelchair; student severely disabled but small and lightweight.

Starting position for helper: kneel on mat beside student.

METHOD:

Helper—assists student onto side, lying face away

- positions student with head bent forward and hips and knees flexed
- places one arm behind student's shoulders and neck
- places other arm under both thighs
- gets a firm grip
- lifts student onto own thighs, bringing student's weight close to the body
- raises up onto one foot
- now stands up, lifting with the legs. *Be sure to have a wide base.*
- gets balance and then carries student to wheelchair
- stands at side of wheelchair, facing it
- bends knees and slowly lowers student into wheelchair
- makes sure student is seated safely in wheelchair before releasing grip*
- secures safety straps and seat belt.

Apply here the Safety Tip described above in order to break a student's fall.

In many cases, students will be able to perform their own independent transfers. If a student is capable of doing an assisted transfer, the therapist will instruct staff in the method used. Independence is to be encouraged whenever possible.

Several examples and techniques of transferring students have been described. It is most important, however, that the staff working with

students discuss transferring techniques with students' parents and therapist and learn the method that works best for a specific individual.

4. Self-Concept

A positive self-concept is necessary for all students to grow into healthy independent adults. Physically disabled students often have a lower-than-average self-image because of their perception of themselves, and because of the perceptions of others. This simulation is intended to provide participants with a starting point for building an entire repertoire of self-concept-related success experiences.

Materials: glue; scissors; picture magazines; 8 1/2" × 11" manilla tags; felt pens.

Activity: Distribute the materials and give participants the following instructions: "Make a collage of a special experience in your life." Allow 20 minutes for the activity.

After they have completed the activity, ask participants to describe their collage.

Variation:

- i. Ask participants to make a collage of themselves, or of a specific feeling, e.g., anger, accomplishment, what they wish to be when they grow up.
- ii. Describe the above activity to participants and have them brainstorm and write an activity that will accomplish the same goal.

Invite participants to discuss the following:

What feelings did you have after the activity?

How could the activity include skills, or relate to co-operating with others?

GLOSSARY

anemia. A condition in which the concentration of hemoglobin in the blood is below normal, a condition caused by a deficient number of erythrocytes (red blood cells), an abnormally low level of hemoglobin in the individual cells, or both circumstances.

arthritis. Painful inflammation of a body joint or joints.

asthma. Chronic respiratory disease characterized by wheezy breathing.

cerebral palsy. A disability caused by brain damage before or during birth, resulting in a loss of muscular control and co-ordination.

cystic fibrosis. A disorder of the exocrine glands that causes blockage and the formation of cysts.

diabetes. A chronic disorder usually caused by a deficient secretion of insulin, a hormonal substance produced by the endocrine glands in the pancreas.

diplegia. Paralysis of corresponding parts of both sides of the body.

epilepsy. A chronic disorder of brain functioning characterized by periodic convulsive seizures.

hemiplegia. Paralysis of one side of the body only, resulting from injury to the motor centres of the brain.

multiple sclerosis. A slow, wasting disease of the nerve sheaths of the brain and spinal cord.

muscular dystrophy. A slow, wasting disease of the skeletal muscles.

paraplegia. Complete paralysis of the lower half of the body, including both legs, caused by injury to, or disease of, the spinal cord.

poliomyelitis. Any of three, acute viral infections of the spinal cord and brain.

prosthesis. The artificial replacement of a limb or other part of the body; an artificial device used in such replacement.

spina bifida. Congenital defect of the spine that results in the meninges (the three protective sheaths which wrap the spinal cord and the brain) being out of place.

REFERENCES FOR WORKSHOP LEADERS AND TEACHERS

1. Acceptance of the Handicapped

Bookbinder, Susan R. *Mainstreaming*. Rhode Island: Exceptional Parent Press, 1979.

A program for educating children and adults about disabilities, with emphasis on the acceptance of differences. Suggests activities and resource materials for implementing the program.

Cohen, Shirley, et al. *Accepting Individual Differences*. Niles, Ill.: Developmental Learning Materials, 1977.

This kit includes five booklets and four large picture books. Booklets include basic concepts and student activities to match each picture book.

P.A.T.H. (*Positive Attitudes Toward the Handicapped*) kit. Calgary: Regional Resource Service, Alberta Education, 1978.

A kit containing a variety of materials that encourage a more positive attitude toward handicapped people. Includes simulation and reference materials.

Ravosa, Carmino C., et al. *Put on a Handicap*. Long Branch, N.J.: Kimbo Educational, 1979.

This record is an aid in preparing a class for mainstreaming. It gives children the opportunity to experience handicapping conditions through simulation and role-playing.

Ward, Michael, et al. *Everybody Counts! A Workshop Manual to Increase Awareness of Handicapped People*. Reston, Va.: Council for Exceptional Children, 1979.

A booklet and corresponding tape designed as an initial experimental-learning strategy to assist people in a fuller appreciation of the struggles, frustrations, and triumphs of the handicapped in today's society.

2. Parent/Teacher Resources

Bigge, June L. *Teaching Individuals With Physical and Multiple Disabilities*. Columbus, Ohio: Charles E. Merrill, 1982.

A book designed for those who teach or develop curriculum for individuals with physical and multiple impairments. Ideas, strategies, and materials are appropriate for classroom

use. Task analysis provides the basic framework of this book. Focus is on providing individualized instruction for the disabled person.

Billotto, Gerardo, and Veronica Washam. *Work Independence and the Severely Disabled: A Bibliography*. Alexandria, Va.: Human Resources Center, 1980.

A review of literature related to increasing the independence of people with severe disabilities. Focus is on aiding the successful labor participation of disabled individuals. Architectural barriers, job modifications, special equipment, and various other issues are dealt with.

Bowe, Frank. *Handicapping America: Barriers to Disabled People*. New York: Harper and Row, 1978.

Provides an in-depth look at the physical and social barriers that confront disabled people. Defines the many problems in such areas as education, work, and travel and explains what is being done to overcome current barriers.

Bowman, Mary, et al. *Eating With a Spoon: How to Teach Your Multihandicapped Child*. Columbus, Ohio: Ohio State University Press, 1975.

Manual on how to teach a handicapped child to eat with a utensil as part of an overall self-feeding program. Useful to parents with children who have co-ordination difficulties, muscular weaknesses, or general delay of mental or motor function. Also contains a few suggestions for aiding the blind child.

Cruickshank, William M. *Cerebral Palsy, A Developmental Disability (Revised)*. New York, N.Y.: Syracuse University Press, 1976.

Presents data on assessment and treatment of cerebral palsy. Focuses on clinical issues alone, and discusses neurophysiology, dental problems, interdisciplinary education, mental retardation, hearing, communication and family processes.

Gallender, Demos. *Teaching Eating and Toileting Skills to the Multi-Handicapped in the School Setting*. Springfield, Ill.: Charles C. Thomas, 1980.

Describes the neurological and physiological systems involved in the teaching of eating and toileting skills and provides suggestions and exercises to stimulate learning.

Guidance Counselling and Support Services for High School Students with Physical Disabilities: Visual, Hearing, Orthopedic, Neuromuscular, Epilepsy, Chronic Health Conditions. Irvine, Calif.: Technical Education Research Center, 1977.

Emphasizes the need for counsellors for the disabled within the regular school setting. Special emphasis is given to educational/career guidance, with suggestions of what issues the counsellor should be familiar with, as well as recommended materials and resources.

Handling the Handicapped. Cambridge, England: Woodhead-Faulkner/The Chartered Society of Physiotherapy, 1980.

This book shows correct methods for lifting and moving the handicapped and will be of assistance to those who live or work with PH persons.

Hickman, Heather. *Access to Leisure*. Vanier, Ont.: Canadian Parks and Recreation Association, 1981.

A booklet with information on physically disabled persons, and the architectural barriers which inhibit their utilization of Canada's recreational facilities.

Hofman, Helenmarie, et al. *Science Education and the Physically Handicapped*. Washington, D.C.: National Science Teachers Association, 1979.

A collection of papers and articles that review various options for making full participation for the handicapped science student a reality.

Jegard, Suzanne, et al. *A Comprehensive Program for Multi-Handicapped Children*. Saskatoon, Sask.: Alvin Buckwald Centre, 1980.

An illustrated approach to helping the multi-handicapped child to become a "total" child. Sections deal with gross motor skills, fine motor skills, communication skills, auditory skills, visual skills, tactile, olfactory and gustatory skills, self-help skills, body awareness, and the multi-handicapped child's need for empathy and understanding within the school system.

Love, Harold. *Teaching Physically Handicapped Children: Methods and Materials*. Springfield, Ill.: Charles C. Thomas, 1978.

A combination text and resource book that provides methods and materials useful in teaching children with orthopedic, sensory, or special health problems. Covers evaluation and emphasizes post-school and vocational training.

Mullins, June B. *A Teacher's Guide to Management of Physically Handicapped Students*. Springfield, Ill.: Charles C. Thomas, 1979.

The book explores special management concerns regarding students who have physical, sensory, and health problems. Discusses full integration of the handicapped into regular school environments.

O'Quinn, Aglaia N., and Thompson, Robert J., Jr. *Developmental Disabilities*. New York, N.Y.: Oxford University Press, 1979.

Discusses the concept of developmental disabilities, etiologies and manifestations, as well as management issues. Disabilities covered are: mental handicaps, autism, cerebral palsy, cerebral dysfunction, seizure disorders, and sensory disorders.

Power, Paul M. *Role of the Family in the Rehabilitation of the Physically Disabled*. Baltimore, Md.: University Park Press, 1980.

This book contains information for health professionals on how the family can act as a resource in rehabilitation, how the family can help with various therapeutic approaches, and how the family can be helped to adjust to chronic illness.

Readings in Physically Handicapped Education. Guilford, Conn.: Special Learning Corporation, 1978.

This series of articles deals with a wide range of topics, including the many success stories of PH individuals. Also discusses cause and prevention, educational and occupational services, and communication.

Russell, Philippa. *The Wheelchair Child*. London, England: Souvenir Press, 1978.

An information book for parents and professionals about the problem, but potential, of wheelchair life. Gives information on services and resources, as well as dealing with problems, aids, costs, education and environment.

Safford, Philip L., and Arbitman, Dena C. *Developmental Intervention with Young Physically Handicapped Children*. Springfield, Ill.: Charles C. Thomas, 1975.

A book that provides information on rehabilitative work and training with young disabled children, and includes documentation of a program designed for children between 18 months and three years.

Theile, Paul E. *Educational Materials for the Handicapped: A Preliminary Union List*. Victoria, B.C.: British Columbia Ministry of Education, 1978.

Lists some 10,000 books, films, and other media materials useful in the education of the handicapped. Arranged alphabetically by title.

GETTING THE MOST FROM A VIDEO PRESENTATION

An educational television program can be an effective and stimulating learning resource. Because of its ability to convey information and meaning through scenes and sounds, television is one of the most effective classroom tools at your disposal. In addition, support materials are available for a number of ACCESS NETWORK programs. Many of these materials—which include student teacher guides and manuals, slides, transparencies, filmstrips, posters, etc.—contain suggestions for previewing and post-viewing activities.

Many teachers have found that the effectiveness of video programming can be enhanced in the following ways:

1. Use the **stop** and **pause** buttons frequently to highlight program segments. This will help break the passive viewing habit created in students by commercial TV and focus their attention on your purpose for showing the program(s).
2. Use the **counter** to prepare for the viewing session. Set it to zero at the start of a program. This will help pinpoint the location of segments to be reviewed later. You can then create a **log** by jotting down the counter numbers that correspond to important segments.
3. Be specific about viewing objectives **before** showing the program. Students will be able to focus their attention better if they are aware of what to look for in a videotape. Prepare a list of guideline questions on the blackboard or on photocopied handouts. (Be sure to cover all of the questions in post-viewing activity.)
4. Since educational television programs generally include more material than can be digested in a single viewing, show the program in its entirety once and then, after clarifying vocabulary difficulties and reviewing specific learning objectives, show selected portions a second, even a third, time. Again, the stop and pause buttons can be used to allow students to take notes—or focus attention on a particular item of importance.
5. Television programs consist of **both** audio and video signals, and viewers often need to be stimulated in order to derive maximum information from both. During the second viewing of a program segment, you can stimulate the development of viewing and listening skills by showing the picture but turning off the sound and asking for recall of audio information. Alternatively, leave the sound on but eliminate the picture.
6. Both for viewing comfort and for note-taking convenience, TV should not be viewed in a dark room. However, light can also be a problem, so the television set should be located to avoid window reflection on the screen. To eliminate ceiling-light reflection, tilt the set forward slightly.
7. Ensure that all students have a clear line of sight to the set. If necessary, alter seating arrangements to give every student a satisfactory view of the screen.
8. Adjust the controls of the TV set to ensure good color balance, adequate brightness, and contrast.
9. In some cases, it is useful to have tapes and equipment available for independent viewing by individual students.

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